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THE CHROMOSOMES OF *DISPORUM MACULATUM*¹

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CHROMOSOME studies on six of the seven species and varieties of *Disporum* (Liliaceae) native to North America have been reported by Jones (1951) in his comprehensive cyto-taxonomic study of this group. Attempts to secure cytological material of the seventh, *D. maculatum*, for his study, however, were unsuccessful. More recently, living material of this species has been obtained from two sources, and the present account completes the cyto-taxonomic survey of the North American representatives of this genus.

Material available for study included a seedling from plants transplanted originally from Black Mountain, Letcher County, Kentucky, supplied by Dr. E. Lucy Braun, and a plant furnished by Mrs. J. Norman Henry from a collection grown for many years in her garden at Gladwyne, Pennsylvania. There is some question about the original source of the latter plants, but Mrs. Henry is "almost sure" that she collected them near Little Switzerland, Mitchell County, North Carolina. A third plant from Adams County, Ohio, sent by Dr. Braun, did not survive to produce root tips.

The plants were grown outside at Pullman, Washington, and root tips taken in the autumn of 1951 ("Little Switzerland") and summer of 1952 ("Black Mountain"). The root tips were fixed in Belling's modified Navachin's fluid, sectioned at 15 microns, and stained with iodine-crystal violet.

The diploid complement of *Disporum maculatum* (fig. 1) consists of six chromosome pairs ($2n = 12$). The four longer pairs

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have unequal arms of varying proportions. On the fifth pair, no constriction could be detected in any of the material examined, but a thin, lightly stained terminal segment was usually evident. The sixth and shortest chromosome pair possessed submedian constrictions. No important differences in chromosome morphology were noted between the two collections. The chromosomes of "Black Mountain" were noticeably less contracted than those of "Little Switzerland," and the position of the constrictions was not as clear. These differences are probably to be correlated with the temperatures prevailing at the time of fixation rather than attributed to inherent differences between the two collections. No satellites were found on the chromosomes of either collection.

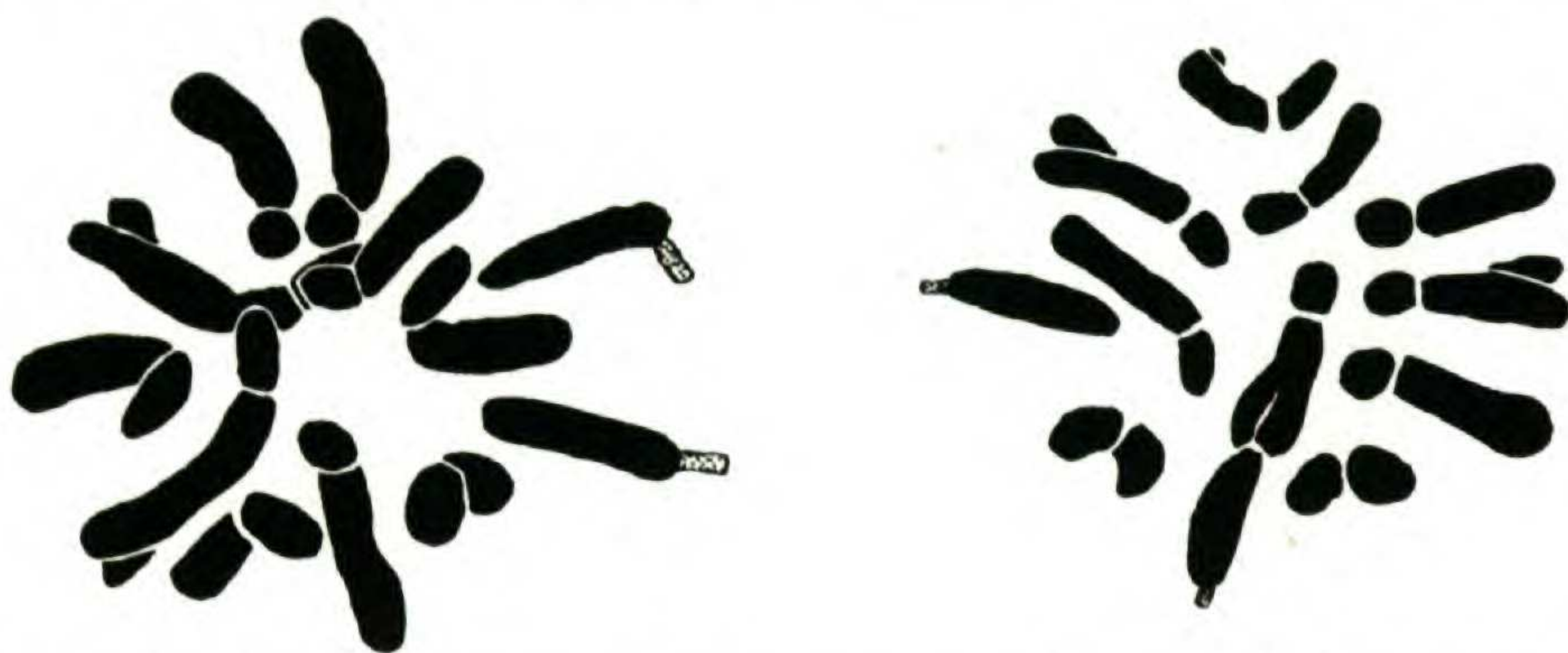


FIGURE 1. Chromosomes of *Disporum maculatum*. Mitotic metaphase from root tips. Left.—"Black Mountain." Right.—"Little Switzerland.", $\times 3100$.

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Disporum maculatum adds a fourth base number ($n = 6$) to those known for the five North American species of this genus. Jones (1951) found *D. Smithii* to have $n = 8$, *D. Hookeri* (3 varieties) and the very similar *D. lanuginosum* to have $n = 9$, and *D. trachycarpum*, $n = 11$. All except *D. maculatum* have one pair of satellited chromosomes. These chromosomal differences are all the more remarkable in view of the striking external homogeneity—vegetatively, at least—of the group. These species today form a small isolated group (the section *Prosartes*), but the chromosome situation suggests that they represent but a remnant of a one-time large and complicated assemblage.—STATE COLLEGE OF WASHINGTON, PULLMAN.

LITERATURE CITED

JONES, QUENTIN. 1951. A cytotaxonomic study of the genus *Disporum* in North America. Contrib. Gray Herbarium, No. CLXXIII.